

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Previously presented) A peptide consisting of at least one T-cell epitope of Japanese cypress pollen allergen Cha o 1, wherein each of said epitopes consists of:

(a) an amino acid sequence selected from the group consisting of Peptide #1-2 (SEQ ID NO:4), Peptide #1-4 (SEQ ID NO:6), Peptide #1-5 (SEQ ID NO:7), Peptide #1-6 (SEQ ID NO:8), Peptide #1-7 (SEQ ID NO:9), Peptide #1-8 (SEQ ID NO:10), Peptide #1-10 (SEQ ID NO:12), Peptide #1-11 (SEQ ID NO:13), Peptide #1-12 (SEQ ID NO:14), Peptide #1-14 (SEQ ID NO:16), Peptide #1-15 (SEQ ID NO:17), Peptide #1-16 (SEQ ID NO:18), Peptide #1-19 (SEQ ID NO:21), Peptide #1-20 (SEQ ID NO:22), Peptide #1-21 (SEQ ID NO:23), Peptide #1-22 (SEQ ID NO: 24), Peptide #1-23 (SEQ ID NO:25), Peptide #1-24 (SEQ ID NO:26), Peptide #1-25 (SEQ ID NO:27), Peptide #1-27 (SEQ ID NO:29), Peptide #1-30 (SEQ ID NO:32), Peptide #1-31 (SEQ ID NO:33), Peptide #1-32 (SEQ ID NO:34), Peptide #1-33 (SEQ ID NO:35), and Peptide #1-34 (SEQ ID NO:36) shown in Fig. 4 and has T-cell stimulating activity; or

(b) a part of said amino acid sequence and has T-cell stimulating activity equivalent to that of a peptide consisting of said amino acid sequence.

2. (Withdrawn) A peptide comprising at least one T-cell epitope of Japanese cypress pollen allergen Cha o 2 and consisting of an amino acid sequence selected from the group consisting of

Peptide #2-5 (SEQ ID NO:42), Peptide #2-7 (SEQ ID NO:44), Peptide #2-8 (SEQ ID NO:45), Peptide #2-9 (SEQ ID NO:46), Peptide #2-10 (SEQ ID NO:47), Peptide #2-11 (SEQ ID NO:48), Peptide #2-12 (SEQ ID NO:49), Peptide #2-13 (SEQ ID NO:50), Peptide #2-14 (SEQ ID NO:51), Peptide #2-15 (SEQ ID NO:52), Peptide #2-16 (SEQ ID NO:53), Peptide #2-17 (SEQ ID NO:54), Peptide #2-18 (SEQ ID NO:55), Peptide #2-19 (SEQ ID NO:56), Peptide #2-20 (SEQ ID NO:57), Peptide #2-21 (SEQ ID NO:58), Peptide #2-22 (SEQ ID NO:59), Peptide #2-23 (SEQ ID NO:60), Peptide #2-24 (SEQ ID NO:61), Peptide #2-25 (SEQ ID NO:62), Peptide #2-26 (SEQ ID NO:63), Peptide #2-27 (SEQ ID NO:64), Peptide #2-30 (SEQ ID NO:67), Peptide #2-31 (SEQ ID NO:68), Peptide #2-32 (SEQ ID NO:69), Peptide #2-33 (SEQ ID NO:70), Peptide #2-34 (SEQ ID NO:71), Peptide #2-35 (SEQ ID NO:72), Peptide #2-36 (SEQ ID NO:73), Peptide #2-37 (SEQ ID NO:74), Peptide #2-38 (SEQ ID NO:75), Peptide #2-40 (SEQ ID NO:77), Peptide #2-41 (SEQ ID NO:78), Peptide #2-42 (SEQ ID NO:79), Peptide #2-43 (SEQ ID NO:80) shown in Fig. 8, or a part of said amino acid sequence.

3-4. (Cancelled)

5. (Currently amended) A composition ~~consisting essentially of~~ comprising the peptide of claim 1, as an active ingredient, and a pharmaceutically acceptable diluent or carrier.

6. (Cancelled)

7. (Withdrawn) A method for treating or preventing pollinosis caused by tree pollen in springtime, comprising administering the peptide of claim 1 to an individual susceptible to said pollinosis.

8-10. (Cancelled)

11. (Withdrawn) The peptide of claim 2, wherein said peptide comprises at least two T-cell epitopes.

12. (Cancelled)

13. (Withdrawn) A composition for peptide-based immunotherapy of pollinosis caused by tree pollen in springtime, comprising the peptide of claim 2 as an active ingredient, and a pharmaceutically acceptable diluent or carrier.

14. (Withdrawn) A method for treating or preventing pollinosis caused by tree pollens in springtime, comprising administering the peptide of claim 2 to an individual susceptible to said pollinosis.

15-16. (Cancelled)

17. (Withdrawn) A method of diagnosis comprising:

- (a) providing a population of cells from an individual, the population of cells comprising lymphocytes;
- (b) contacting said population of cells with a peptide of claim 1; and
- (c) determining responsiveness of the lymphocytes to the peptide as an indication that the individual is susceptible to pollinosis caused by Japanese cypress pollen allergens or by tree pollen allergens that are immunologically cross-reactive with Japanese cypress pollen allergens.

18-19. (Cancelled)

20. (Withdrawn) A process for making an analog peptide, comprising synthesizing an analog peptide consisting of a sequence identical to a peptide of claim 1, except for substitution of one or more amino acid residues that mediate an interaction with a T cell receptor or that mediate an interaction with a major histocompatibility complex (MHC) class II molecule, wherein the analog peptide stimulates a T cell that is responsive to the peptide of claim 1.

21. (Withdrawn) A method of diagnosis comprising:

- (a) providing a population of cells from an individual, the population of cells comprising lymphocytes;
- (b) contacting the population of cells with the peptide of claim 2; and
- (c) determining responsiveness of the lymphocytes to the peptide as an indication that the individual is susceptible to pollinosis caused by Japanese cypress pollen allergens or by tree pollen allergens that are immunologically cross-reactive with Japanese cypress pollen allergens.

22. (Withdrawn) An analog peptide consisting of a sequence identical to a wild-type peptide of claim 2, except for substitution of one or more amino acid residues that mediate an interaction with a T cell receptor or that mediate an interaction with a major histocompatibility complex (MHC) class II molecule, wherein the analog peptide stimulates a T cell that is responsive to the wild-type peptide.

23. (Withdrawn) The analog peptide of claim 22, wherein the analog peptide stimulates the T cell to produce a greater amount of interferon- $\gamma$  than stimulated by the wild-type peptide.

24. (Withdrawn) A process for making an analog peptide, comprising synthesizing an analog peptide consisting of a sequence identical to a peptide of claim 2, except for substitution of one or more amino acid residues that mediate an interaction with a T cell receptor or that mediate an interaction with a major histocompatibility complex (MHC) class II molecule, wherein the analog peptide stimulates a T cell that is responsive to the peptide of claim 2.

25. (Withdrawn) A modified peptide consisting of the sequence of a wild-type peptide of claim 1 modified by addition or deletion of one or more amino acid residues, wherein the modified peptide is recognized by only those T cells which recognize the peptide of claim 1.

26. (Withdrawn) The modified peptide of claim 25, wherein said modification enhances solubility, stability, or both solubility and stability, compared to the wild-type peptide.

27. (Withdrawn) A modified peptide consisting of the sequence of a wild-type peptide of claim 2 modified by addition or deletion of one or more amino acid residues, wherein the modified peptide is recognized by only those T cells which recognize the peptide of claim 2.

28. (Withdrawn) The modified peptide of claim 27, wherein the modification enhances solubility, stability, or both solubility and stability, compared to the wild-type peptide.

29. (Previously presented) The peptide of claim 1, wherein each of said epitopes consists of an amino acid sequence selected from the group consisting of: Peptide #1-2 (SEQ ID NO:4), Peptide #1-4 (SEQ ID NO:6), Peptide #1-5 (SEQ ID NO:7), Peptide #1-6 (SEQ ID NO:8), Peptide #1-7 (SEQ ID NO:9), Peptide #1-8 (SEQ ID NO:10), Peptide #1-10 (SEQ ID NO:12), Peptide #1-11 (SEQ ID NO:13), Peptide #1-12 (SEQ ID NO:14), Peptide #1-14 (SEQ ID NO:16), Peptide #1-15 (SEQ ID NO:17), Peptide #1-16 (SEQ ID NO:18), Peptide #1-19 (SEQ ID

NO:21), Peptide #1-20 (SEQ ID NO:22), Peptide #1-21 (SEQ ID NO:23), Peptide #1-22 (SEQ ID NO:24), Peptide #1-23 (SEQ ID NO:25), Peptide #1-24 (SEQ ID NO:26), Peptide #1-25 (SEQ ID NO:27), Peptide #1-27 (SEQ ID NO:29), Peptide #1-30 (SEQ ID NO:32), Peptide #1-31 (SEQ ID NO:33), Peptide #1-32 (SEQ ID NO:34), Peptide #1-33 (SEQ ID NO:35) and Peptide #1-34 (SEQ ID NO:36) shown in Fig. 4.

30. (Previously presented) The peptide of claim 1, wherein each of said epitopes consists of an amino acid sequence selected from the group consisting of Peptide #1-2 (SEQ ID NO:4), Peptide #1-7 (SEQ ID NO:9), Peptide #1-8 (SEQ ID NO:10), Peptide #1-20 (SEQ ID NO:22), Peptide #1-22 (SEQ ID NO:24), Peptide #1-24 (SEQ ID NO:26), Peptide #1-32 (SEQ ID NO:34), Peptide #1-33 (SEQ ID NO:35), and Peptide #1-34 (SEQ ID NO:36) shown in Fig. 4.

31. (Previously presented) The peptide of claim 1, wherein each of said epitopes consists of an amino acid sequence selected from the group consisting of Peptide #1-7 (SEQ ID NO:9), Peptide #1-22 (SEQ ID NO:24), Peptide #1-32 (SEQ ID NO:34), and Peptide #1-33 (SEQ ID NO:35) shown in Fig. 4.

32. (Previously presented) The composition of claim 5, wherein treatment of a patient with said composition can reduce the symptoms of Japanese cypress pollinosis or cedar pollinosis.

33. (Currently amended) A composition ~~consisting essentially of~~ comprising the peptide of claim 29 as an active ingredient, and a pharmaceutically acceptable diluent or carrier.

34. (Currently amended) A composition ~~consisting essentially of~~ comprising the peptide of claim 30 as an active ingredient, and a pharmaceutically acceptable diluent or carrier.

35. (Currently amended) A composition ~~consisting essentially of~~ comprising the peptide of claim 31 as an active ingredient, and a pharmaceutically acceptable diluent or carrier.

36. (Withdrawn) An analog peptide consisting of a sequence indential to that of a wild-type peptide of claim 1, except for substitutions in one or more amino acid residues that mediate an interaction with a T cell receptor or that mediate an interaction with a major histocompatibility complex (MHC) class II molecule, wherein the analog peptide simulates a T cell that is responsive to the wild-type peptide.

37. (Withdrawn) The analog peptide of claim 36, wherein the analog peptide stimulates the T cell to produce a greater amount of interferon- $\gamma$  than stimulated by the wild-type peptide.

38. (Previously presented) The peptide of claim 1, wherein said linker is Arg-Arg or Lys-Lys.

39. (Currently amended) A peptide consisting of at least two T-cell epitopes of Japanese cypress pollen allergen Cha o 1 and a linker sensitive to enzyme cleavage between [[two]] each T-cell epitope~~[[s]]~~, wherein at least one of said epitopes consists of:

(a) an amino acid sequence selected from the group consisting of Peptide #1-2 (SEQ ID NO:4), Peptide #1-4 (SEQ ID NO:6), Peptide #1-5 (SEQ ID NO:7), Peptide #1-6 (SEQ ID NO:8), Peptide #1-7 (SEQ ID NO:9), Peptide #1-8 (SEQ ID NO:10), Peptide #1-10 (SEQ ID NO:12), Peptide #1-11 (SEQ ID NO:13), Peptide #1-12 (SEQ ID NO:14), Peptide #1-14 (SEQ ID NO:16), Peptide #1-15 (SEQ ID NO:17), Peptide #1-16 (SEQ ID NO:18), Peptide #1-19 (SEQ ID NO:21), Peptide #1-20 (SEQ ID NO:22), Peptide #1-21 (SEQ ID NO:23), Peptide #1-22 (SEQ ID NO: 24), Peptide #1-23 (SEQ ID NO:25), Peptide #1-24 (SEQ ID NO:26), Peptide #1-25 (SEQ ID NO:27), Peptide #1-26 (SEQ ID NO:28), Peptide #1-27 (SEQ ID NO:29), Peptide #1-30 (SEQ ID NO:32), Peptide #1-31 (SEQ ID NO:33), Peptide #1-32 (SEQ ID NO:34), Peptide #1-33 (SEQ ID NO:35), and Peptide #1-34 (SEQ ID NO:36) shown in Fig. 4 and has T-cell stimulating activity; or

(b) a part of said amino acid sequence and has T-cell stimulating activity equivalent to that of a peptide consisting of said amino acid sequence.